

199-K-27 (A4653) Log Data Report

Borehole Information:

Borehole: 199-K-27 (A4653)		Site: North of K-East Reactor			
Coordinates (WA St Plane)		GWL¹ (ft): None		GWL Date: 05/16/06	
North 146763.80	East 569155.96	Drill Date 09/79	Elevation (TOC) 465 ft	Total Depth (ft) 90	Type Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded steel	2.0	6 5/8	6	5/16	2.0	90

Borehole Notes:

Casing diameter and stickup measurements for the 6-in. casing were acquired using a caliper and steel tape. Measurements are rounded to the nearest 1/16 inch. It is reported that the casing was perforated from 65 to 85 ft. Groundwater was reported at 72.6 ft in September 1994. No groundwater was encountered during logging of this borehole to 73 ft. The borehole apparently has been plugged by silt entering through the perforations or by another obstruction. Logging data acquisition is referenced to the top of casing (TOC).

Spectral Gamma Logging System (SGLS) Equipment Information:

Logging System: Gamma 1N		Type: SGLS (60%) SN: 45-TP22020A	
Effective Calibration Date: 04/05/06		Calibration Reference: DOE/EM-GJ1183-2006	
		Logging Procedure: MAC-HGLP 1.6.5, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat			
Date	05/15/06	05/15/06			
Logging Engineer	Spatz	Spatz			
Start Depth (ft)	2.0	20.0			
Finish Depth (ft)	73.0	30.0			
Count Time (sec)	100	100			
Live/Real	R	R			
Shield (Y/N)	N	N			
MSA Interval (ft)	1.0	1.0			
ft/min	N/A ²	N/A			
Pre-Verification	AN026CAB	AN026CAB			
Start File	AN026000	AN026072			
Finish File	AN026071	AN026080			
Post-Verification	AN026CAA	AN026CAA			

Log Run	1	2 Repeat			
Depth Return Error (in.)	N/A	- 0.25			
Comments	Fine-gain adjustment: file -070.	No fine-gain adjustment			

Logging Operation Notes:

Logging was conducted with a centralizer on the sonde. Measurements are referenced to the top of casing. A repeat section was collected in this borehole to evaluate the logging system's performance.

Analysis Notes:

Analyst:	Henwood	Date:	06/01/06	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging system were performed before and after data acquisition. Acceptance criteria were met.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated using the EXCEL worksheet template identified as G1NApr06.xls. A casing correction for 0.3125-in.-thick casing was applied to the SGLS data. No corrections for dead time or water were required.

Results and Interpretations:

¹³⁷Cs was detected at two locations using the routine processing software. Further scrutiny of the spectra indicates no full energy peaks. The detections are considered invalid.

Elevated radon was observed in this borehole.

The repeat section for the SGLS indicates good agreement for the naturally occurring radionuclides.

List of Plots:

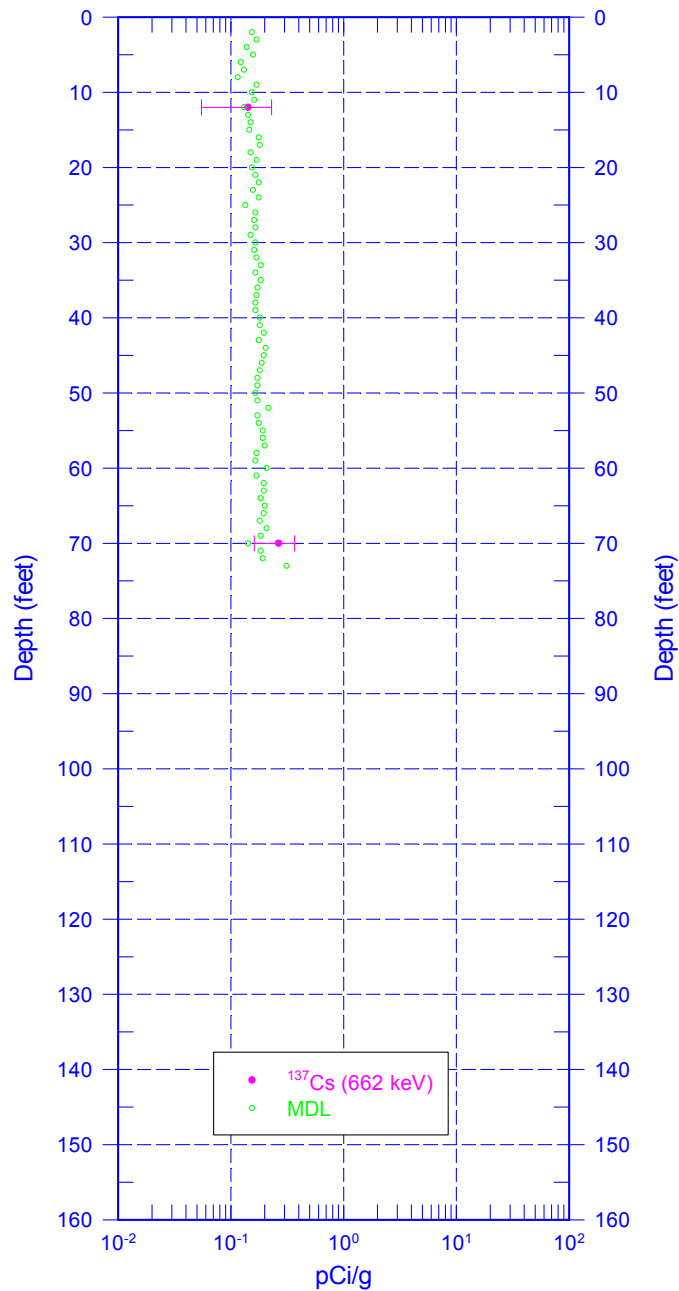
Man-Made Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma and Dead Time
Repeat Section of Natural Gamma Logs

¹ GWL – groundwater level

² N/A – not applicable

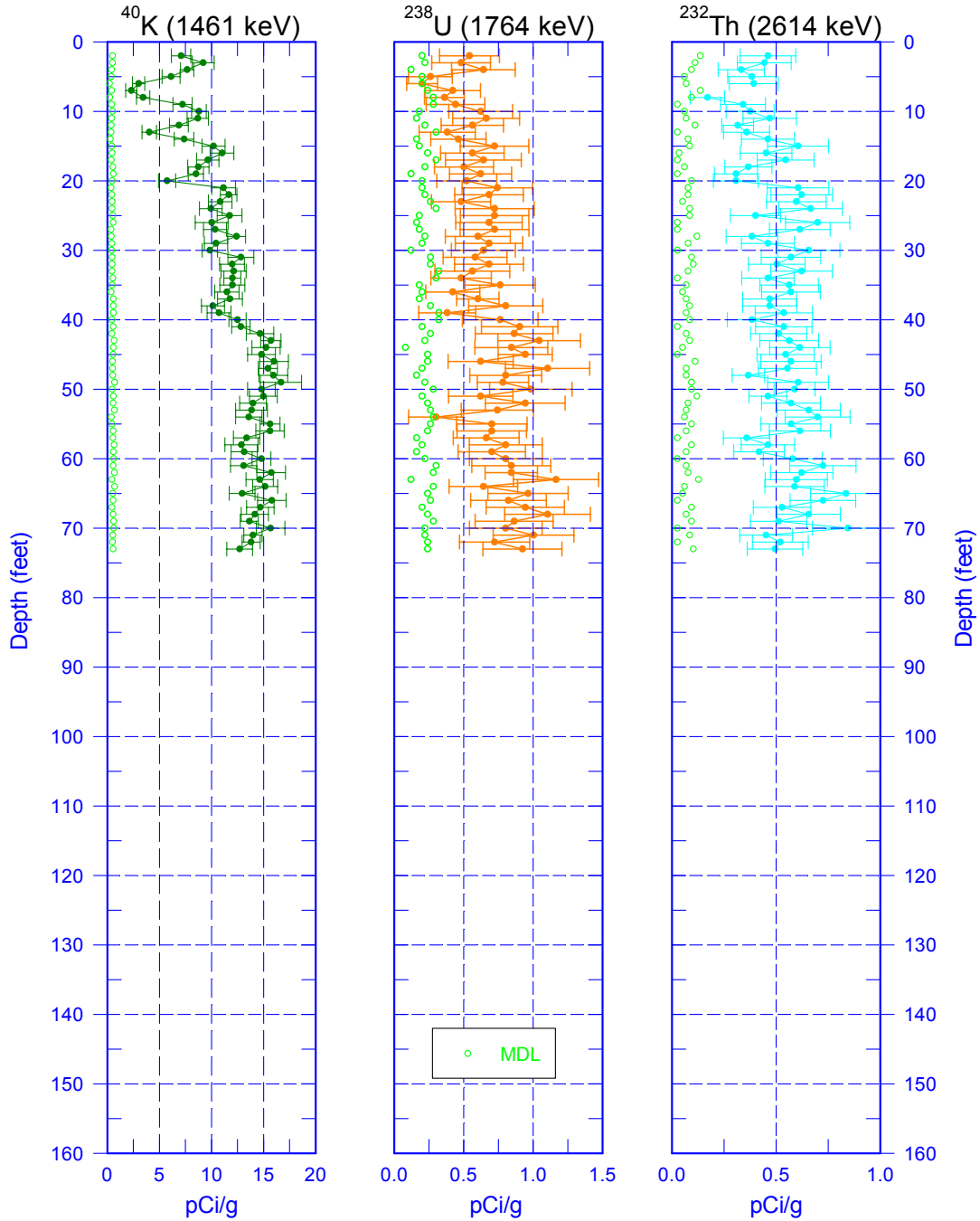
199-K-27 (A4653)

Man-Made Radionuclides



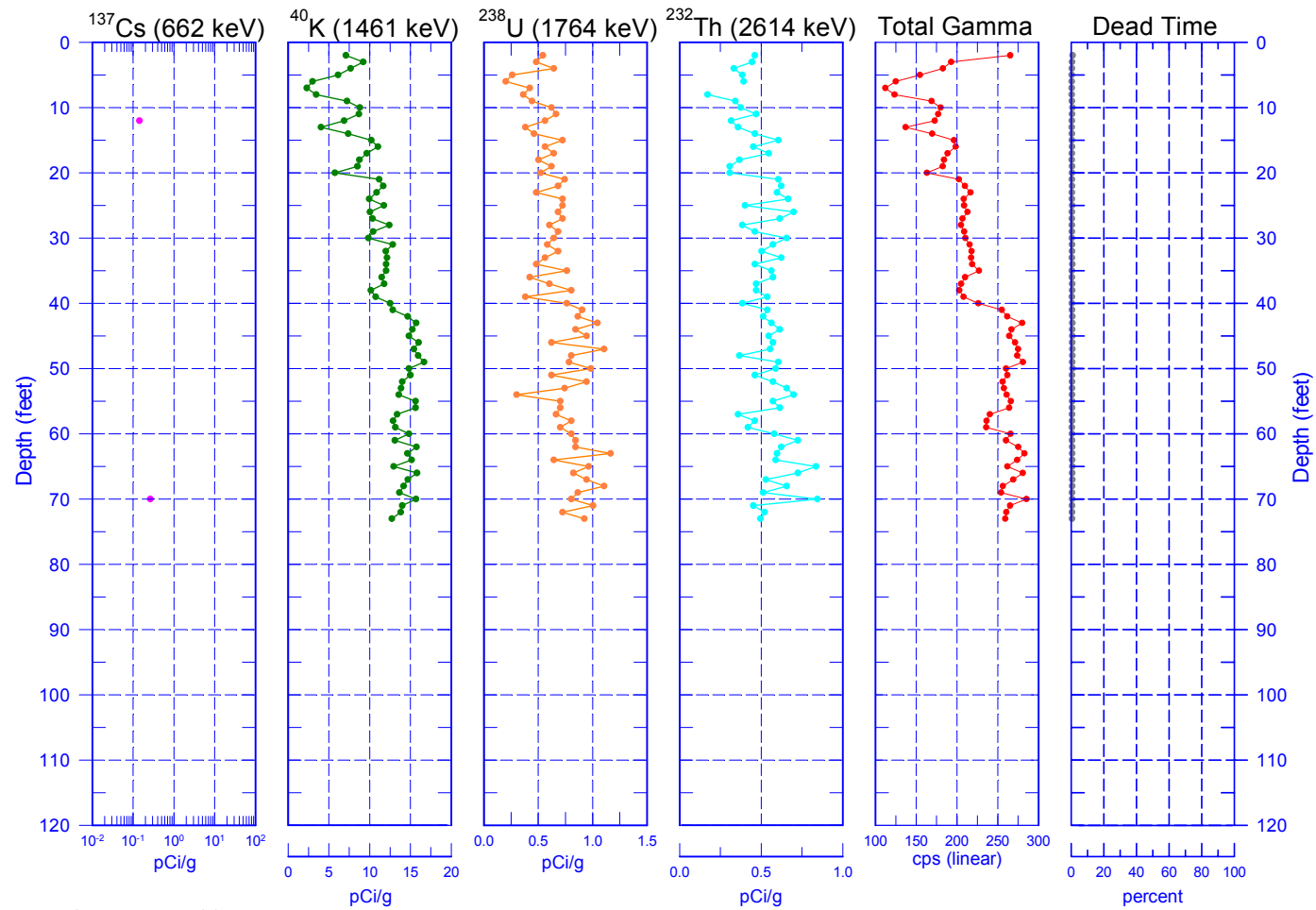
Zero Reference = Top of Casing

199-K-27 (A4653) Natural Gamma Logs



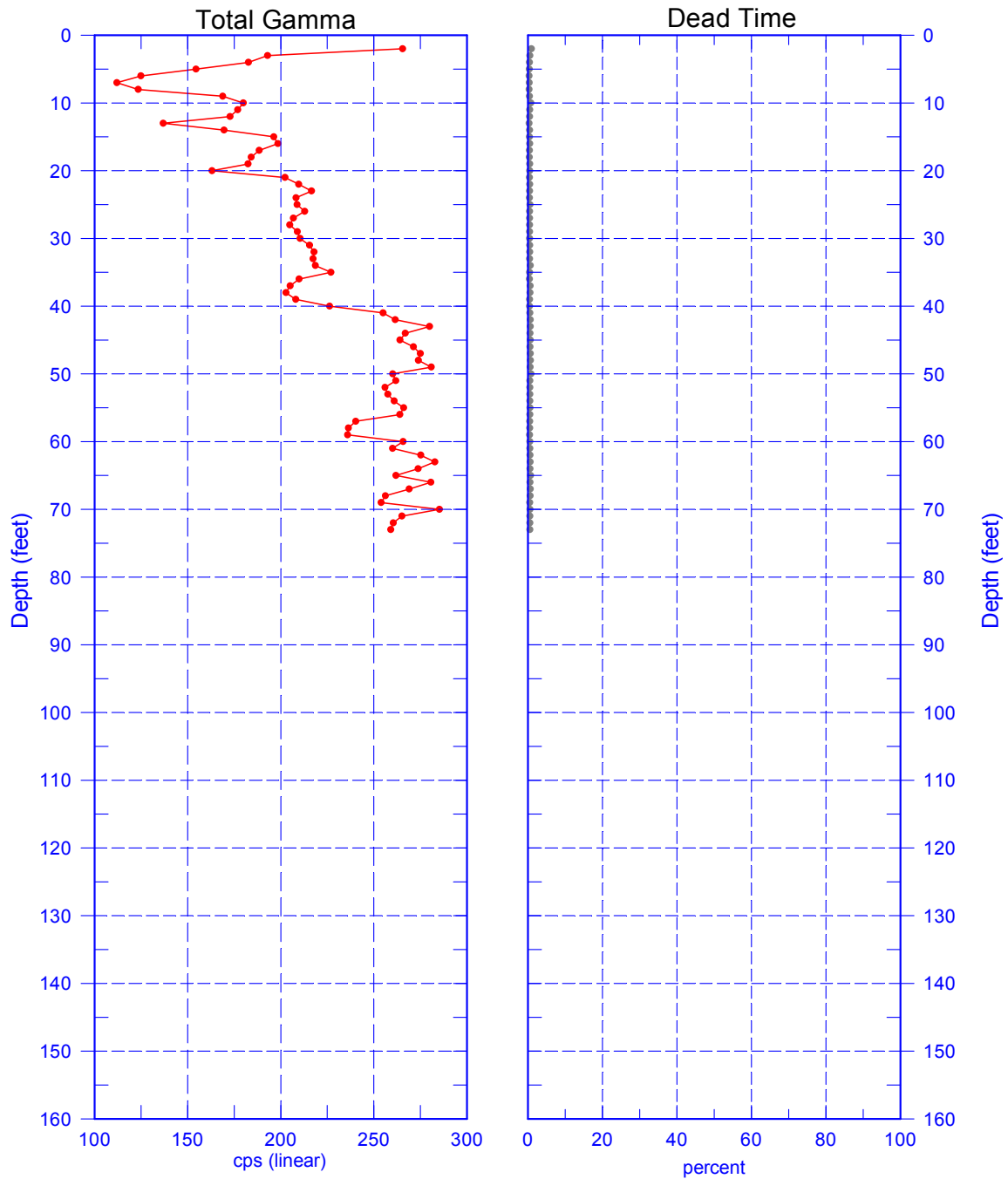
Zero Reference = Top of Casing

199-K-27 (A4653) Combination Plot



199-K-27 (A4653)

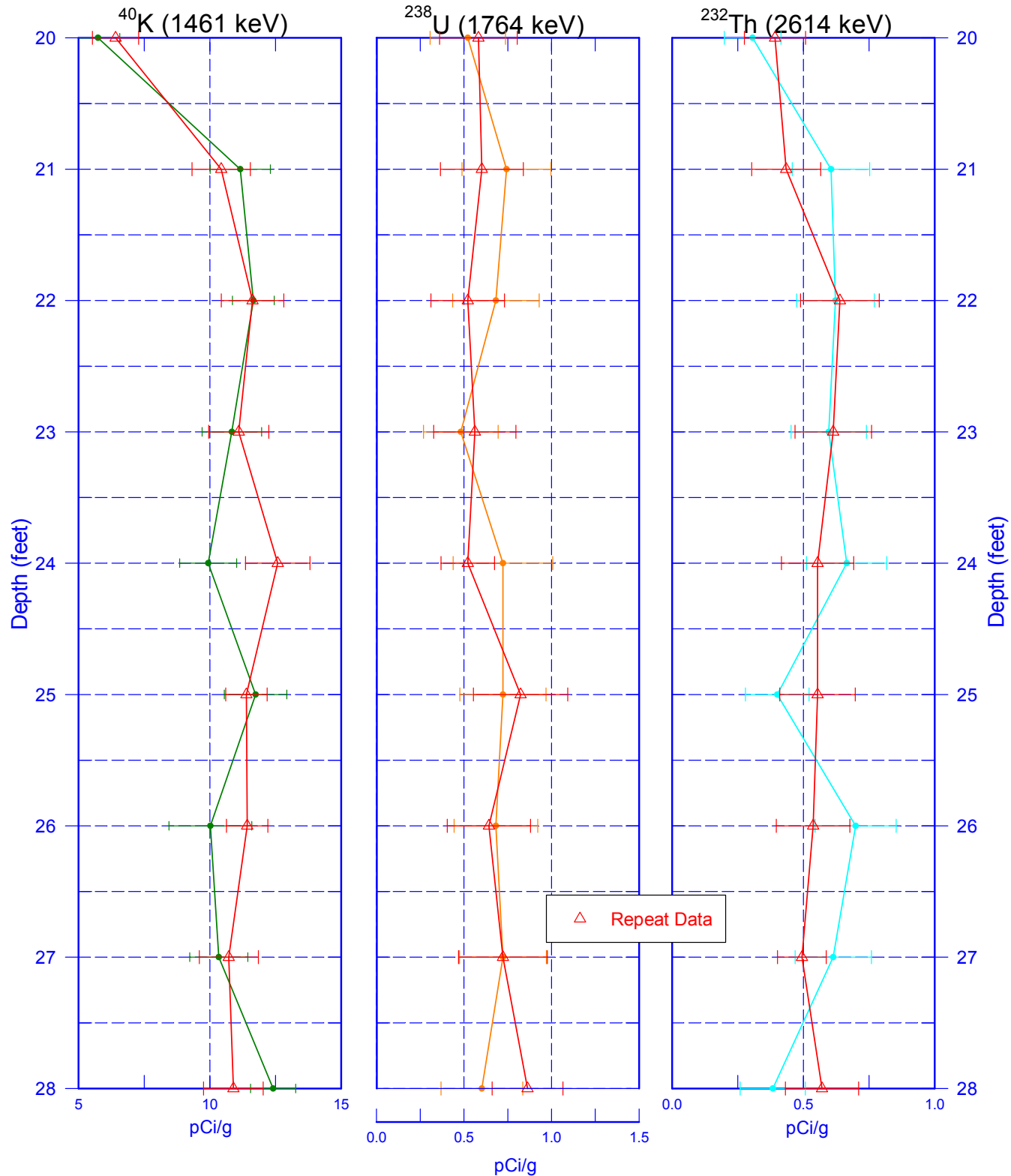
Total Gamma & Dead Time



Reference - Top of Casing

199-K-27 (A4653)

Repeat Section of Natural Gamma Logs



Zero Reference = Top of Casing